NOAA Fisheries' Proposed Strategy to Reduce Ship Strikes of North Atlantic Right Whales

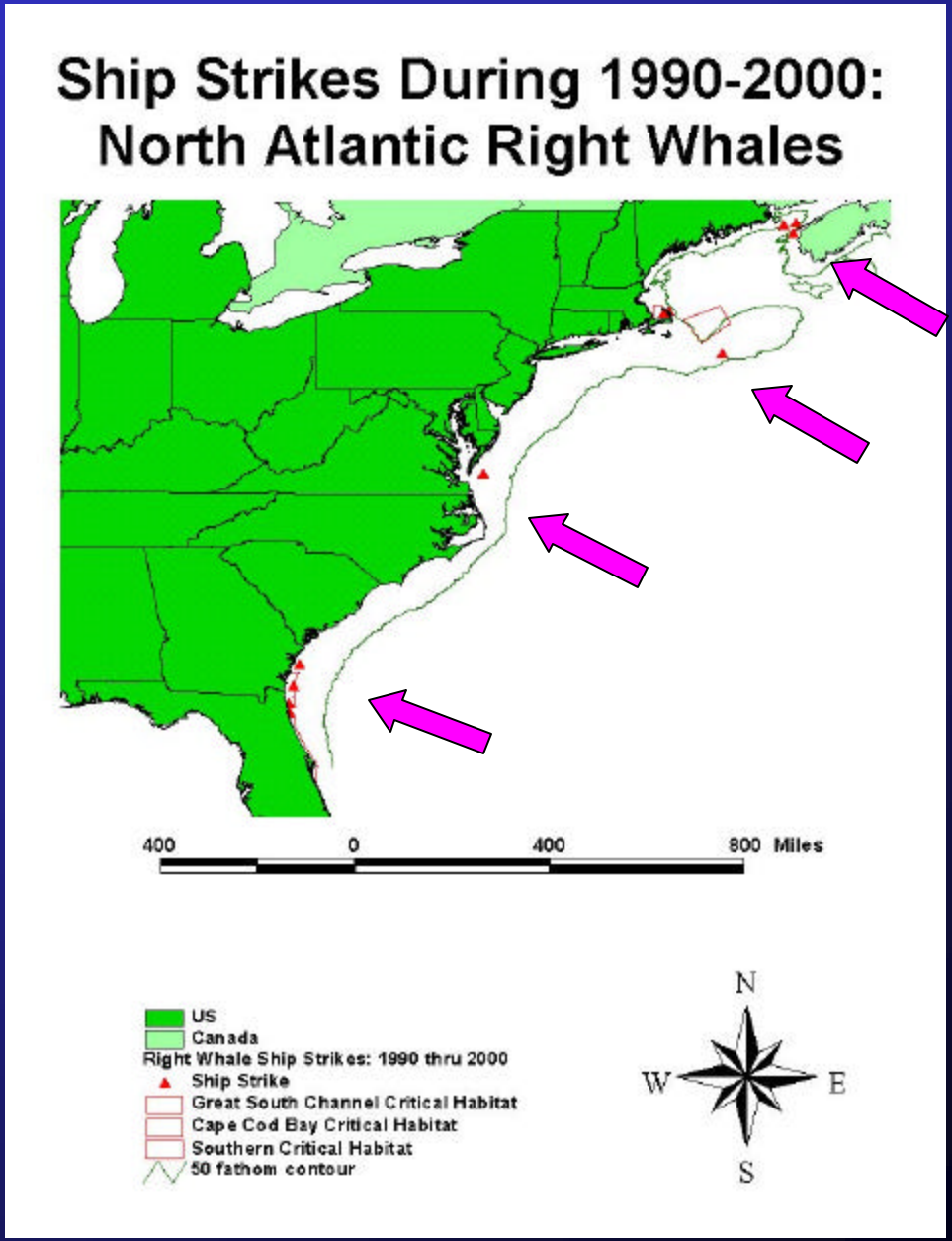
Presented by Donna Wieting, Deputy Director
and Aleria Jensen, Fishery Biologist
Office of Protected Resources

Objectives for Today

- Define the Problem: ***Reduce Threat of Ship Strikes of Right Whales while Minimizing Adverse Impacts on Ports and Shipping Industry***
- Describe NOAA's approach to addressing the problem
- Provide descriptions of proposed regional measures along the US East Coast
- Invite comments

Right whale w/ship strike propeller wounds

Ship strikes occur along entire U.S. east coast



Strategy Focuses on North Atlantic Right Whales

- North Atlantic right whales are highly endangered
- Population in decline
- Hit more often, proportionately, than other species
- Collisions with ships greatest known threat
- **14 known ship strike deaths since 1991**; 3 in 2001 and 2002 alone
- The ***death of even a single individual*** increases the risk of extinction

Statutory Responsibilities/Authorities

Endangered Species Act

- Prohibitions against “take”
- Recovery plans for listed species
- ESA section 7 consultations

- Marine Mammal Protection Act
  - Prohibitions against “take”
  - Limits how many individuals can be removed from a population

Strategy Objective

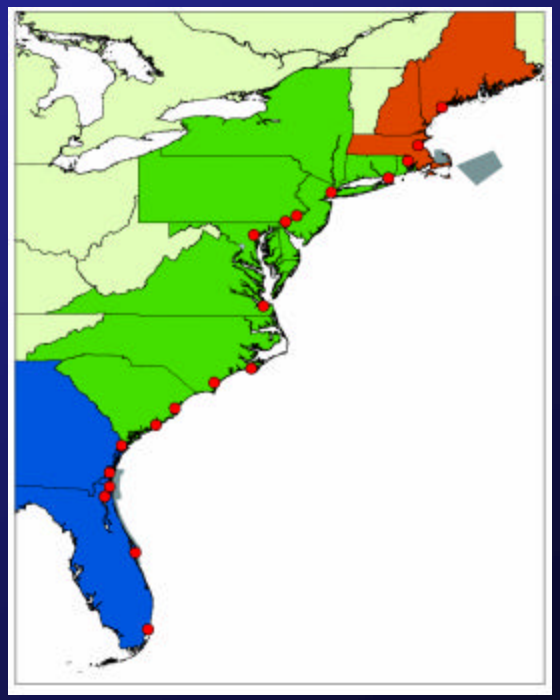
A comprehensive, long-term, range-wide Strategy to reduce ship strikes of right whales while also minimizing adverse impacts to ports and shipping industry.

Developing NOAA's Strategy -- Approach Taken

- NOAA Fisheries spent over 14 months analyzing data and options
- Background information:
  http://www.nmfs.noaa.gov/prot_res/
- ***Wide range*** of options identified -- 100+ measures considered -- from "do nothing" to "no ships"

Developing NOAA's Strategy

- U.S. East Coast divided into 3 regions based on the biology and distribution of right whales
  - Northeast U.S.
  - Mid-Atlantic States
  - Southeast U.S.



- For each Region, the NOAA Group:
  - reviewed biology, economics, and potential impacts to industry
  - identified possible measures
  - considered area and time

Developing NOAA's Strategy

- Data Used:
  - Vessel traffic information
  - 30+ years of survey data
  - Tagging and modeling research
  - Economic Study
  - 2001 report identifying management options
  - Early feedback from other agencies
  - Industry liaisons, biologists, key contacts
  - Recovery Plan Implementation Teams

Current Implementation Actions

- ANPR comment period = June 1- Sept 15, 2004
- Public meetings during summer 2004
- Initiating NEPA process
- Partnering with USCG on Port Access Route Studies
- Stakeholder meetings
- Proposed and final rule

Elements of the Strategy

1. Continue ongoing ship strikes reduction measures
2. Implement education & outreach programs
3. Conservation Agreement with Canada
4. Federal agency consultations under Section 7 of the Endangered Species Act
5. New operational measures for the commercial shipping industry, such as routing measures and speed restrictions

Elements of the Strategy

1. *Continue ongoing ship strike reduction measures*

   - Aircraft surveys and communication of right whale sighting locations
   - Update navigation publications
   - Mandatory Ship Reporting systems
   - Endangered Species Act Section 7 consultations
   - Fund ship strike reduction research, including technologies

Elements of the Strategy
Technologies to Reduce Ship Strikes

- Moving Whales
  - alarm devices
- Moving Ships
  - passive acoustics
  - active acoustics
  - predictive modeling
  - tagging

Elements of the Strategy

2. *Education and Outreach*

   - Develop curricula and training programs for maritime academies
   - Work with Maritime Exchanges/Associations and environmental organizations
   - Incorporate ship strike reduction material into voyage planning guides, licensing programs, etc.
   - Review/update navigational publications

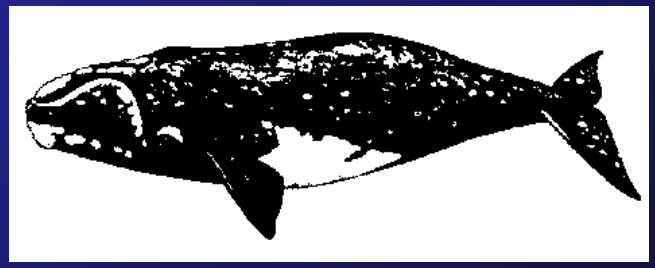
Elements of the Strategy

3. *Negotiate Bi-lateral Conservation Agreement with Canada*
   - Range of right whales is trans-boundary
   - Canada implementing a number of conservation measures
   - Two countries need to collaborate to recover the species

Elements of the Strategy

4. *Federal agency consultations under Section 7 of the Endangered Species Act*

   NOAA Fisheries will be reviewing the need for section 7 consultations with all federal agencies that operate vessels in waters inhabited by right whales



Elements of the Strategy

5. Operational Measures

- Routing measures
  - Minimizes confluence between whales and ships
- Speed restrictions
  - Considered ***only*** when no other measures possible
  - Exact speed to be determined: probably 10-14 knots
- Dynamically managed areas
  - All areas within U.S. Atlantic EEZ
  - Precautionary area established for limited time around concentration of whales

Strategy Overview—All Regions

- Objectives

  --Minimize ship strike threat to right whales

  --Minimize adverse impacts on ships and ports

- Defined tightly, temporally and spatially
- Based on all available data
- Based on input from shipping industry
- Applicable to vessels $\geq$ 65 ft
- Sovereign immune vessels exempt

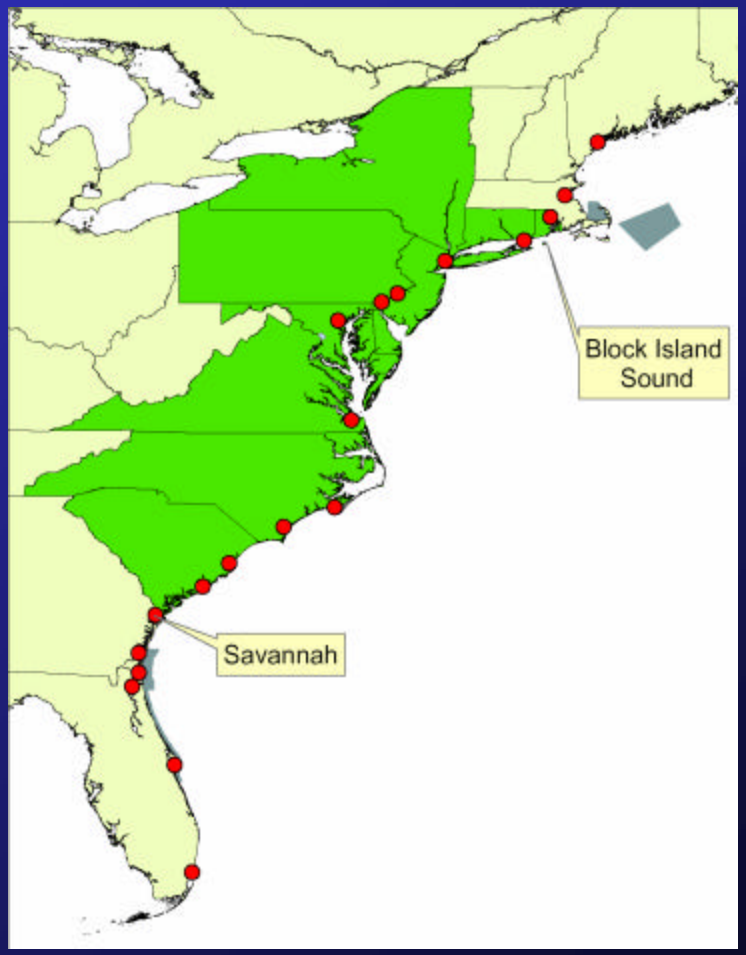
Strategic Plan for Ship Strike Reduction

U.S. Mid-Atlantic and Southeast Regions

Barb Zoodsma, SERO

Mid-Atlantic Region

- Area inclusive of south and east of Block Island Sound, Rhode Island to Port of Savannah, Georgia
- Located between known high use areas in NE and winter calving area in SE



Seasonal Use of Mid-Atlantic Region

- Migratory Corridor for ***Pregnant Females*** moving from NE to SE in fall (Sept-Nov)
- Likely Dec-Mar Resident Use by Calving Females: Cape Fear, NC – SC
- Seasonal Use/Migratory Corridor by Other Population Segments
- Migratory Corridor for Mother/Calf pairs Departing Winter Calving Area in SE for NE Areas (March – May)

Spatial Distribution of Sightings

- Generally observed in waters relatively close to shore
  - 94% of sightings within 30 nautical miles of shore
- Observed in relatively shallow water
  - 93% of sightings in depths <25 fathoms
  - 80 % in depths < 15 fathoms

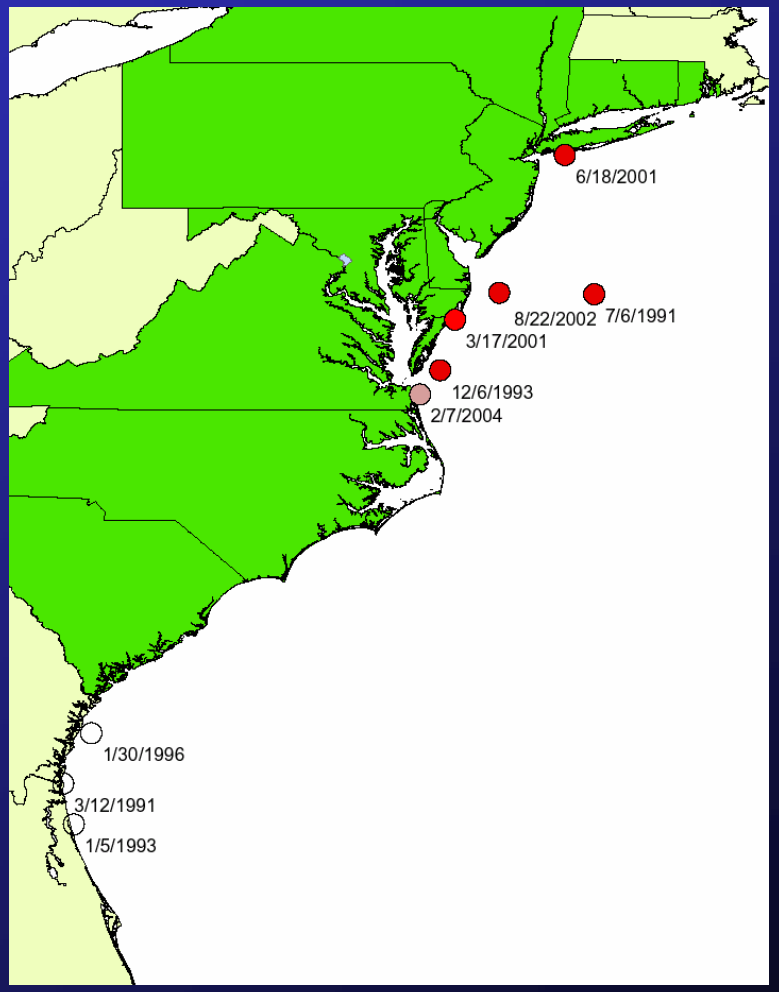
Summarized from Knowlton et al., unpub. report

Mid-Atlantic Region

- Risks to Right Whales:
  - East-west traffic to mid-Atlantic ports bisect north-south movement of whales
  - Vital segment of population (reproducing females) uses this area
    - Migration
    - Other

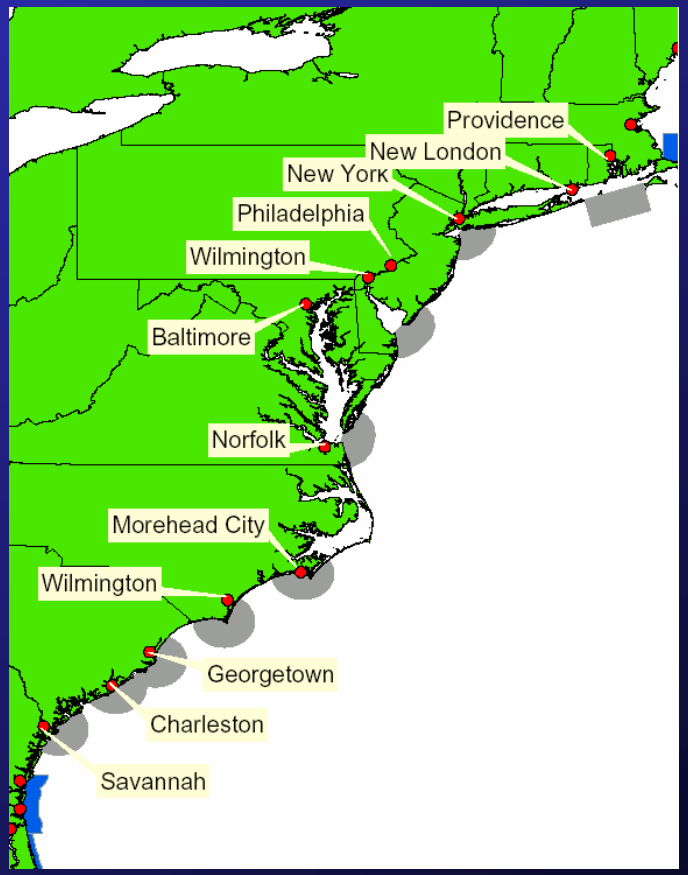
Mid-Atlantic Ship Strike Mortalities
1991 - 2002

- 5 of 14 confirmed ship strike mortalities were in the mid-Atlantic
- 3 ship strike mortalities to right whales occurred in last 3 years
- One in 2004?



Area of Mid-Atlantic Operational Measures

- ~30 nmi area around 9 mid-Atlantic port entrance areas
  - Addresses coastal confluence of whales and ships



Note: Precise size or radii to be determined pending further analysis of sighting data

Seasonality of Proposed Mid-Atlantic Operational Measures

- A set of uniform, rolling dates that closely track right whale occurrence in an area

Note: Precise dates to be determined pending further analysis and modeling

Seasonality of Proposed Mid-Atlantic Operational Measures

PORT	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Providence/New London (Block Island)								
New York								
Philadelphia/Wilmington (Delaware Bay)								
Baltimore/Norfolk (Chesapeake)								
Morehead City, NC								
Wilmington, NC								
Georgetown								
Charleston								
Savannah								

Note: Precise dates to be determined pending further analysis and modeling

Mid-Atlantic Operational Measures Considered, but Rejected

- Do Nothing: No measures (fails to address the problem)
- Mandatory Ship Reporting (difficulties in providing info back to mariners on whale locations)
- Coast-wide measures (greatest ship density at port entrances)
- Extended seasonal restrictions (too burdensome, data lacking)

Proposed Mid-Atlantic Operational Measures

- Speed restrictions in ~30 nmi areas around 9 mid-Atlantic port areas
  - Tight seasonal constraints match biology of whales and minimize impacts on ships and ports

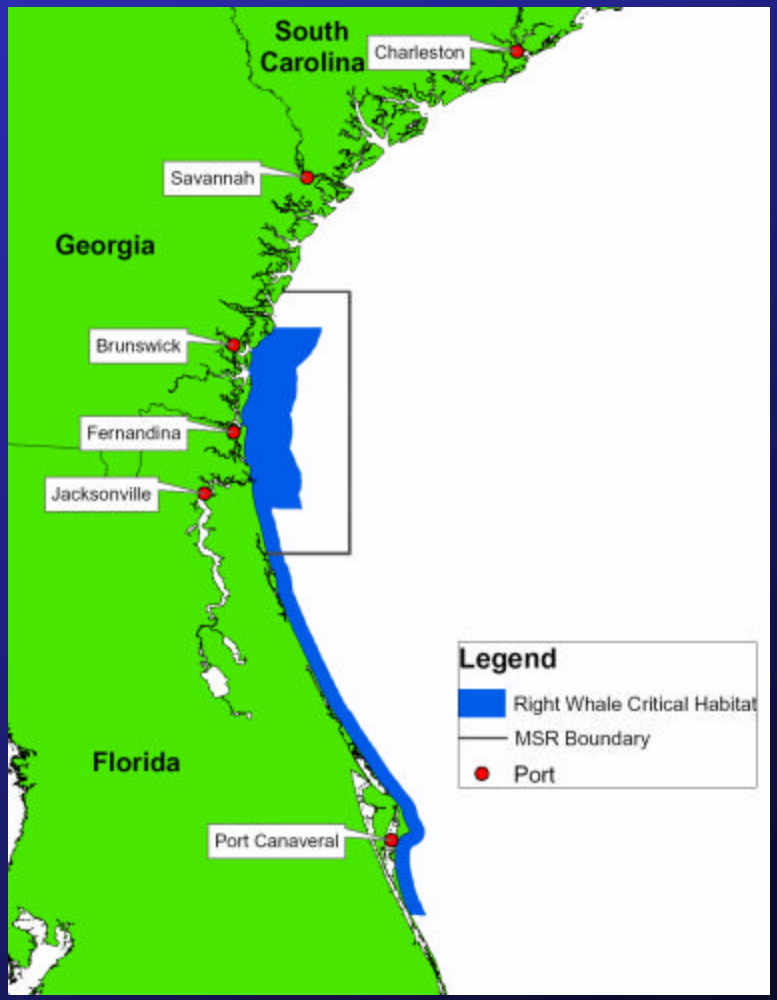
Note: Precise size of area to be determined pending further analysis of sighting data

SEUS Region

- Area inclusive of just north of Brunswick, Georgia to Cape Canaveral, Florida
- Winter calving area

SEUS Region

- Features:
  - Calving Area Critical Habitat
  - MSR Area: WHALESSOUTH
  - Ports:
    - Brunswick, GA
    - Fernandina, FL
    - Jacksonville, FL
    - Cape Canaveral, FL

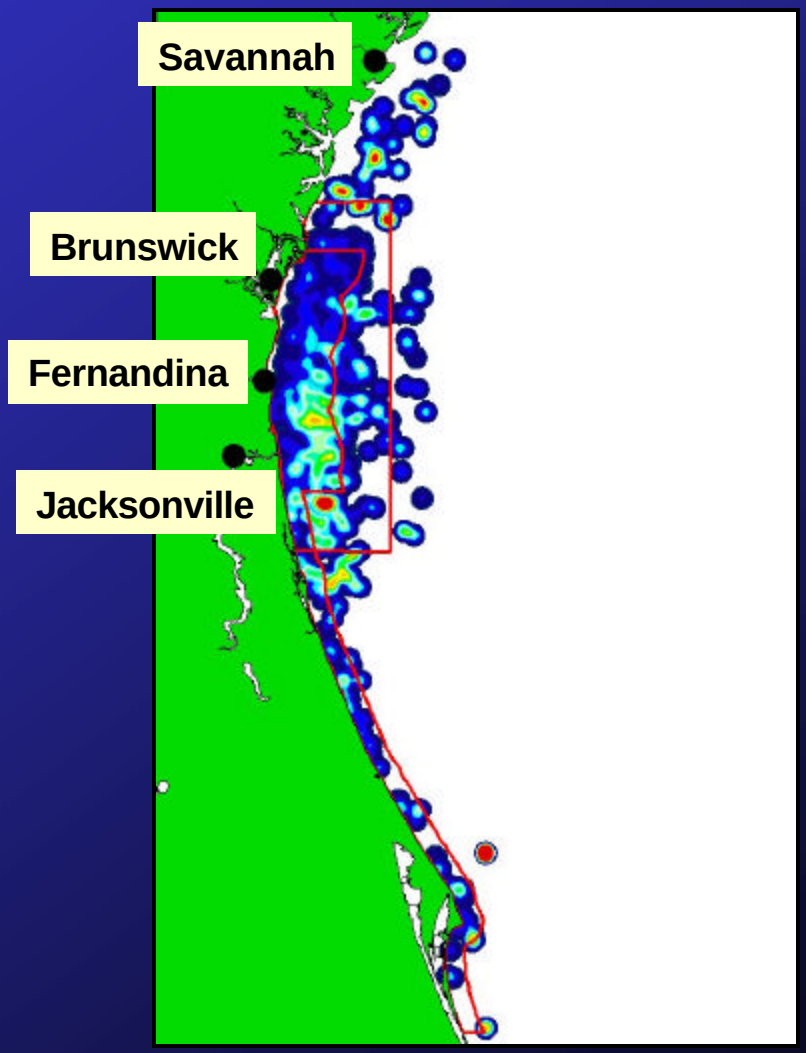


SEUS Region

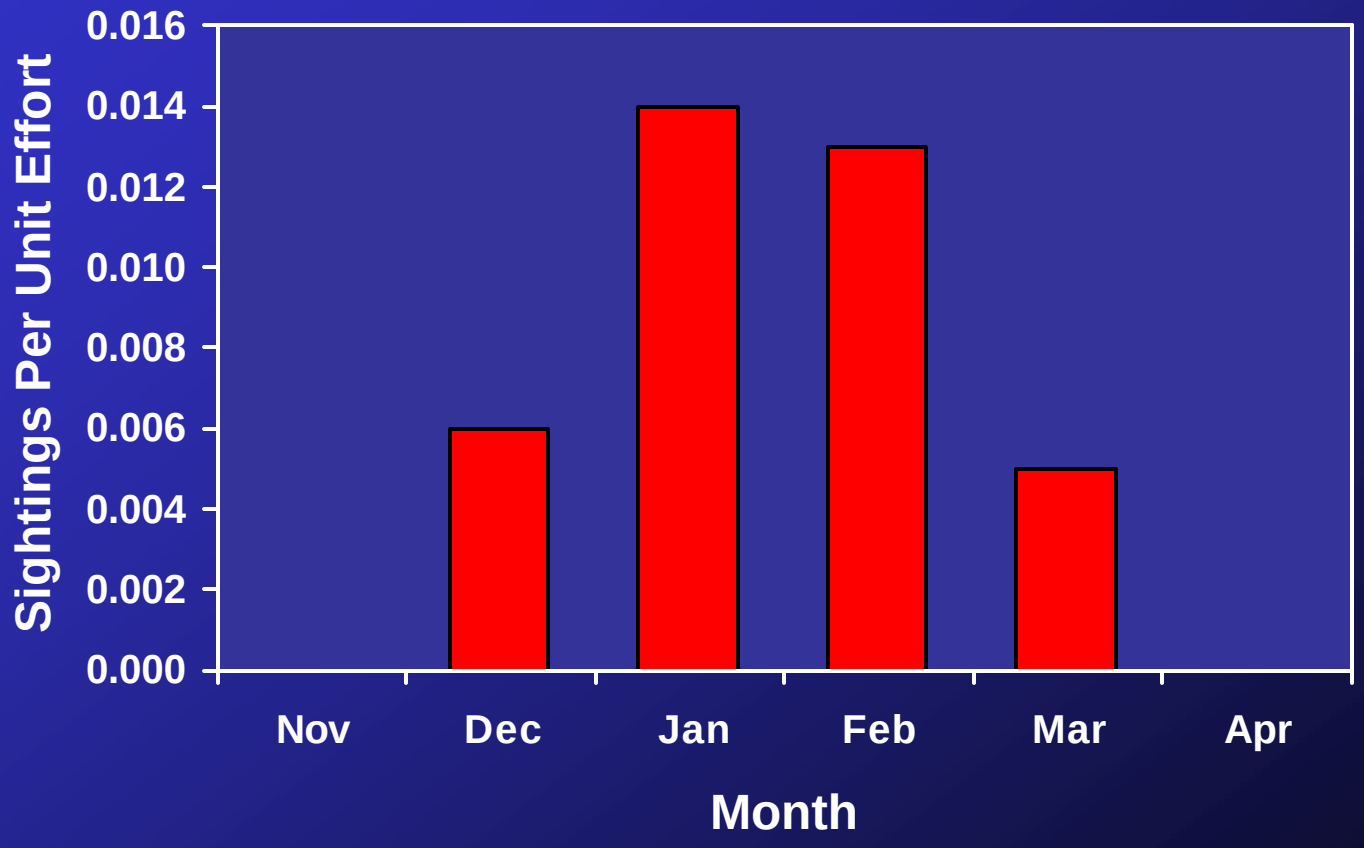
- Only known calving ground for North Atlantic Right Whales
- Seasonal use (Dec. – Mar)
  - Calving females
  - Other population segments
- High proportion of reproducing females in this area (most vital segment of right whale population)
- Protecting reproductive potential is essential for recovery of the species.

Spatial Distribution in SEUS

- Whales distributed fairly close to shore
- High use area from Brunswick to south of Jacksonville



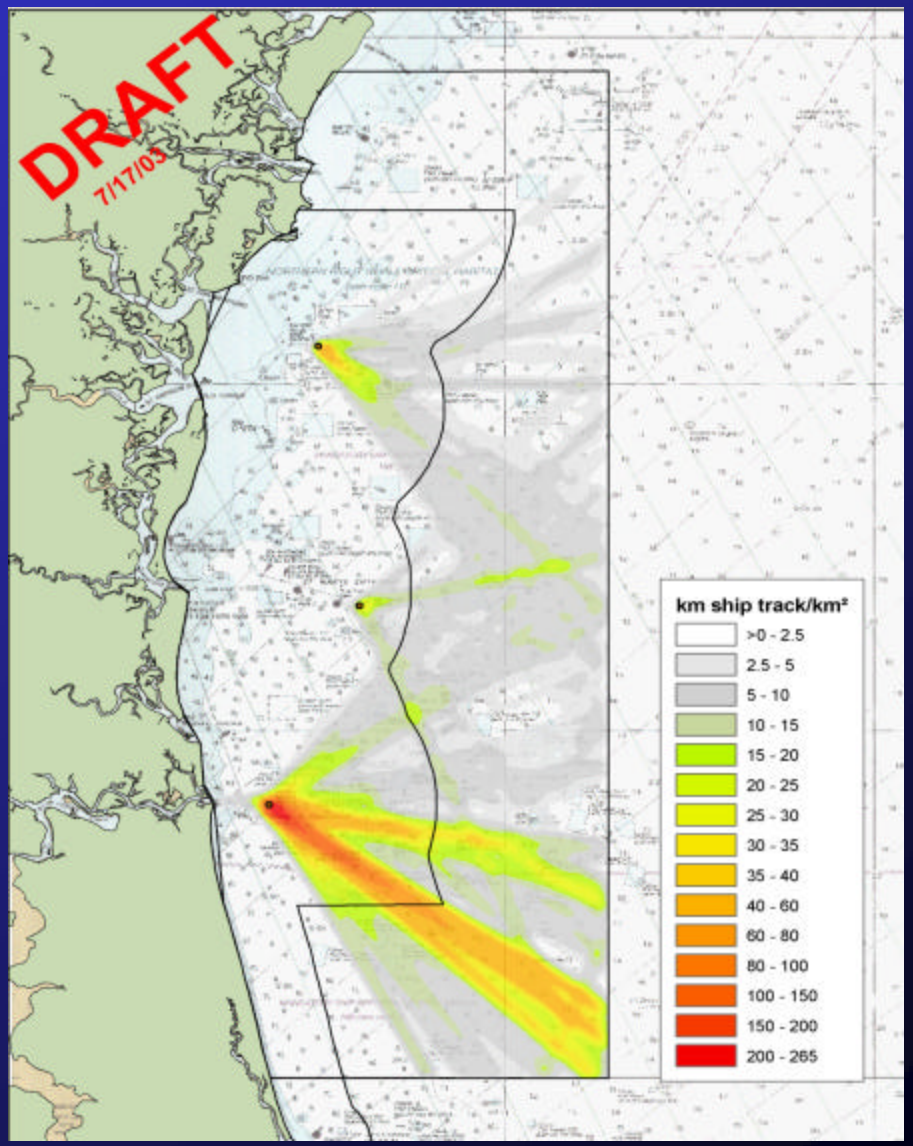
Temporal Distribution of SEUS Right Whale Sightings



Source: NMFS Unpub. Data.
Sightings through 01/02 calving season and south of 31o30' latitude

MSR Ship Tracks

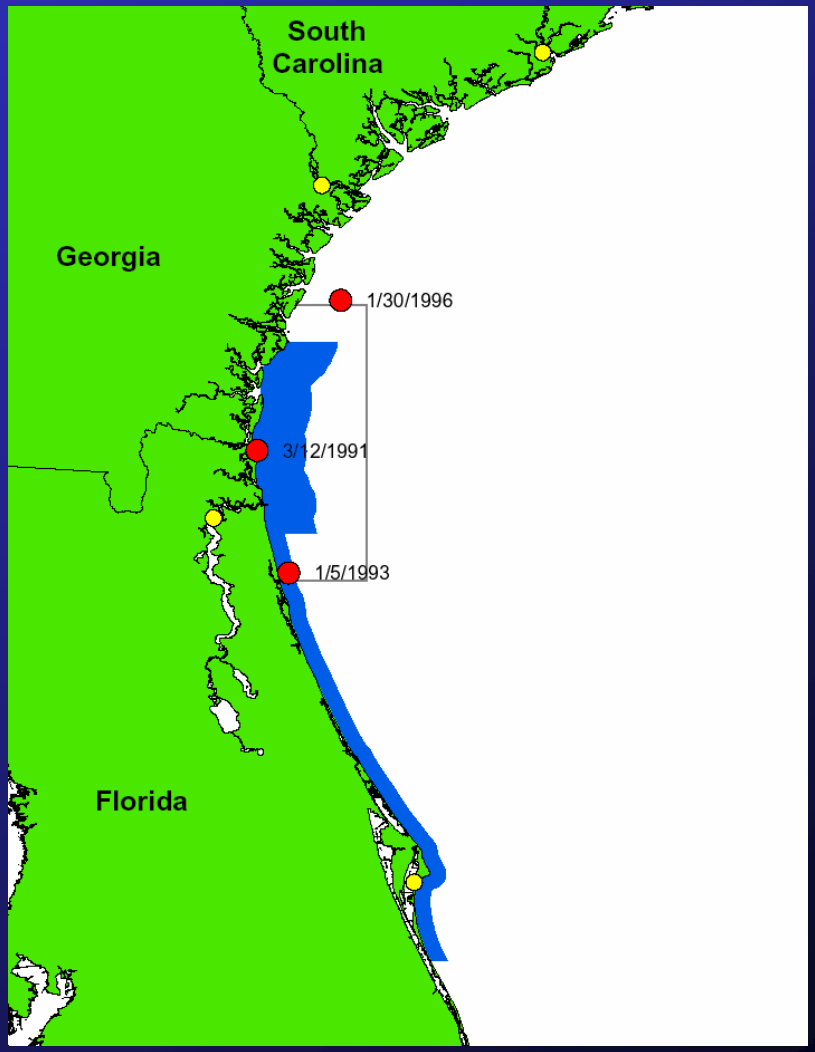
- Provides measure of traffic density through critical habitat
- No defined approaches to these ports
- Several “de facto” traffic lanes
- Highest use port is Jacksonville



Source: Leslie Ward, Florida Marine Research Institute

SE US Ship Strike Mortalities
1991 - 2002

- 3 documented ship strike mortalities

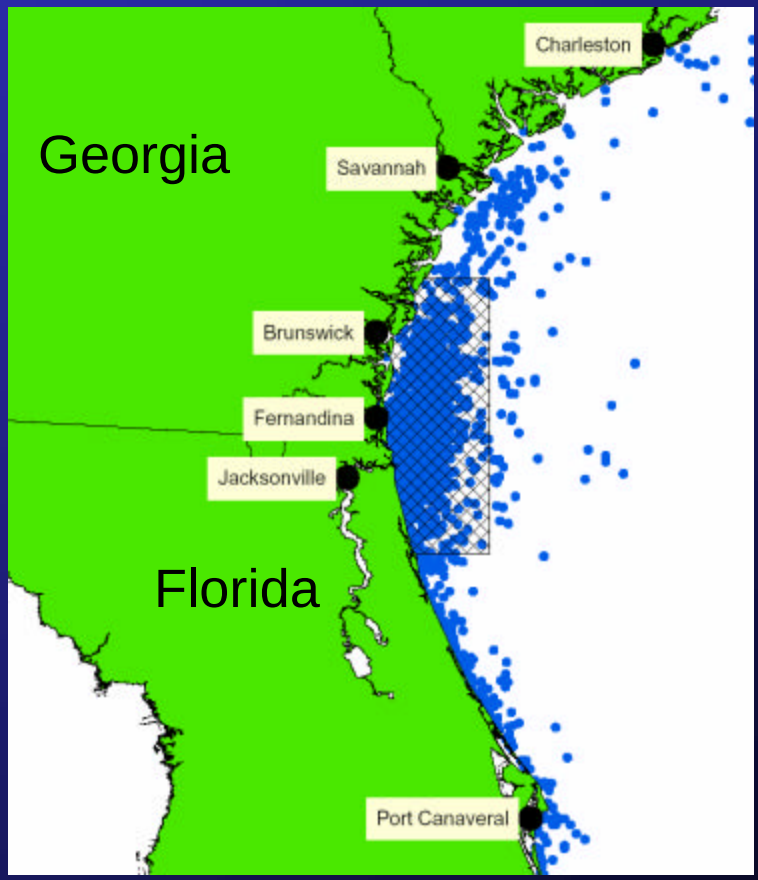


Seasonality of Proposed SEUS Operational Measures

- December 1 through March 31
  - Based on right whale sightings data

Area of Proposed SEUS Operational Measures

- Management area extends east about:
  - 28 nmi off Brunswick
  - 29 nmi off Fernandina
  - 28 nmi off Jacksonville



Note: Precise area delineations pending ongoing analysis and modeling

SEUS Operational Measures Considered, but Rejected

- No Measures (fails to address problem)
- Voluntary Measures (parity)
- Limit port approaches to daylight only (sightability from ships questionable)
- Escort Boats w/ acoustic detection/deterrence technology (nonexistent)

Proposed SEUS Operational Measures

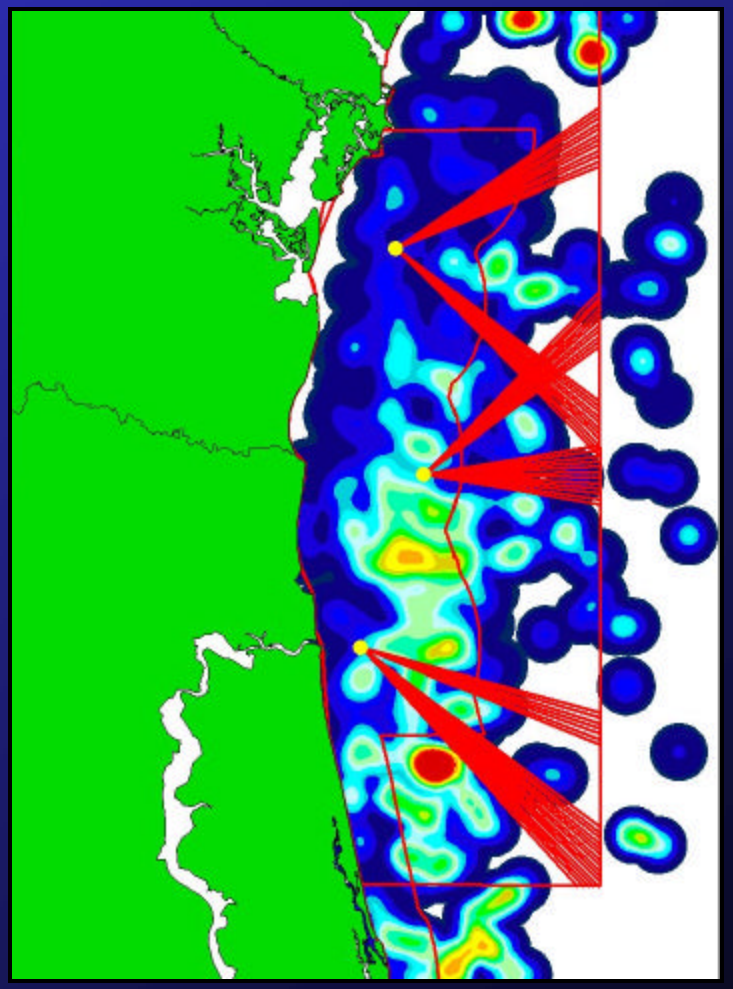
- USCG Port Access Route Study (PARS) for Brunswick, Fernandina, and Jacksonville
  - Objective: full assessment of potential routing on:
    - Risk reduction to right whales
    - Navigational safety
    - Economics of affected ports

Proposed SEUS Operational Measures

- If Port Access Route Study (PARS) suggests appropriate for Brunswick, Fernandina, and Jacksonville
  - Establish designated lanes to reduce risk to right whales
  - Implement speed restrictions in the designated lanes

Proposed SEUS Operational Measures

- PARS ensures full hearing of any routing measure considered.
  - Allows for integration of views: maritime safety, port elasticity, and right whale protection



Proposed SEUS Operational Measures

- Develop an understanding with large recreational traffic and tug/barges that travel coastwise to:
  - Minimize their time in the area where right whales occur
  - Use traffic lanes to the extent possible
  - Observe speed restrictions if outside of lanes

Proposed Mid-Atlantic And Southeast Operational Measures

- Measures concentrate on ***area*** of high risk (whale/ship confluence near port entrances)
- Measures concentrate on ***time*** when whales are in the area (lessen burden on maritime industry)
- Measures provide ***parity*** across mid-Atlantic and Southeast ports (to address issue of port dislocation)
- Measures ***minimize restrictions*** (particularly when whales are not present)

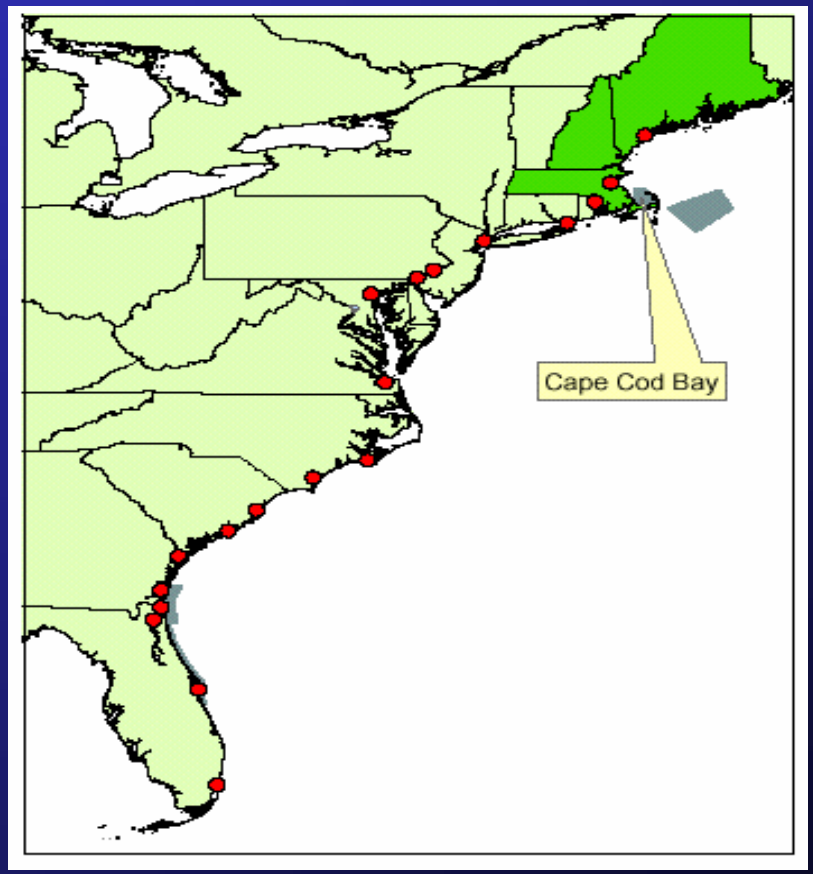
Strategic Plan for Ship Strike Reduction

Northeast Coast of the United States (NEUS)

Patricia Gerrior, NERO

Northeast Region

- Block Island Sound, RI east and north to Canadian border
- Encompasses major feeding area for right whales

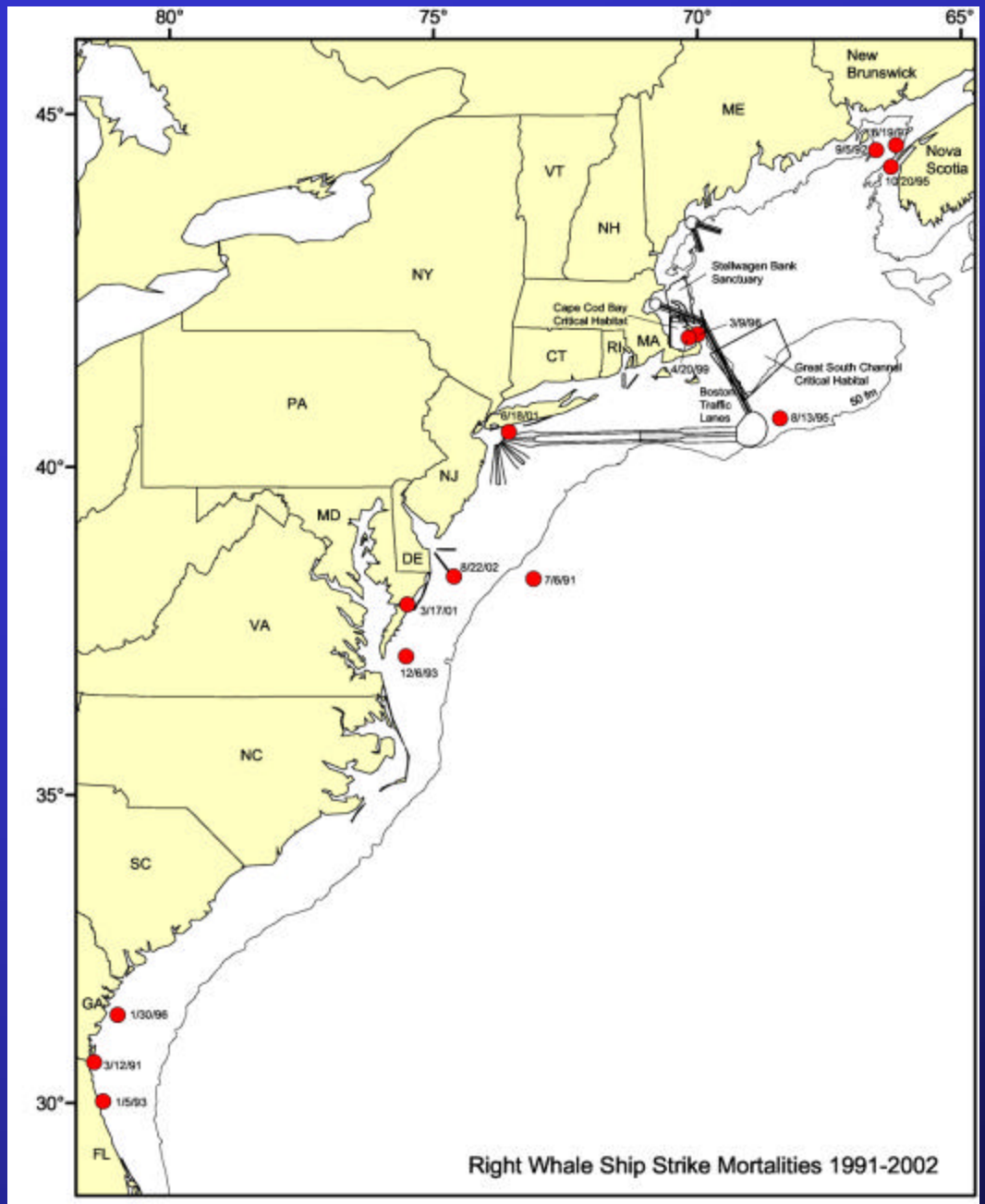


Right Whale Use of the Northeast Region

- Majority of right whale population moves through NE waters annually
- All age and sex classes
- Major feeding grounds in NE
- Present in areas for days to weeks
- Groups of 100+ animals observed at times in some NE areas

Right Whale Use of the Northeast Region

- Right whales present year around, but show an annual pattern of movements
  - **Winter –** Cape Cod Bay
  - **Spring –** Great South Channel and the northern edge of Georges Bank; mother-calf pairs arrive from SE USA
  - **Summer –** GOM & Canadian waters (Bay of Fundy and Scotian Shelf)
  - **Fall –** Whales disperse, pregnant females travel to SE USA waters to calve along with some juveniles



Right Whale Ship Strikes 1991 – 2002

- NE (inc CA) 6 strikes
  - Sept 1992
  - Aug 1995
  - Oct 1995
  - Mar 1996
  - Aug 1997
  - Apr 1999
- MA 5 strikes
- SE 3 strikes

Applicability

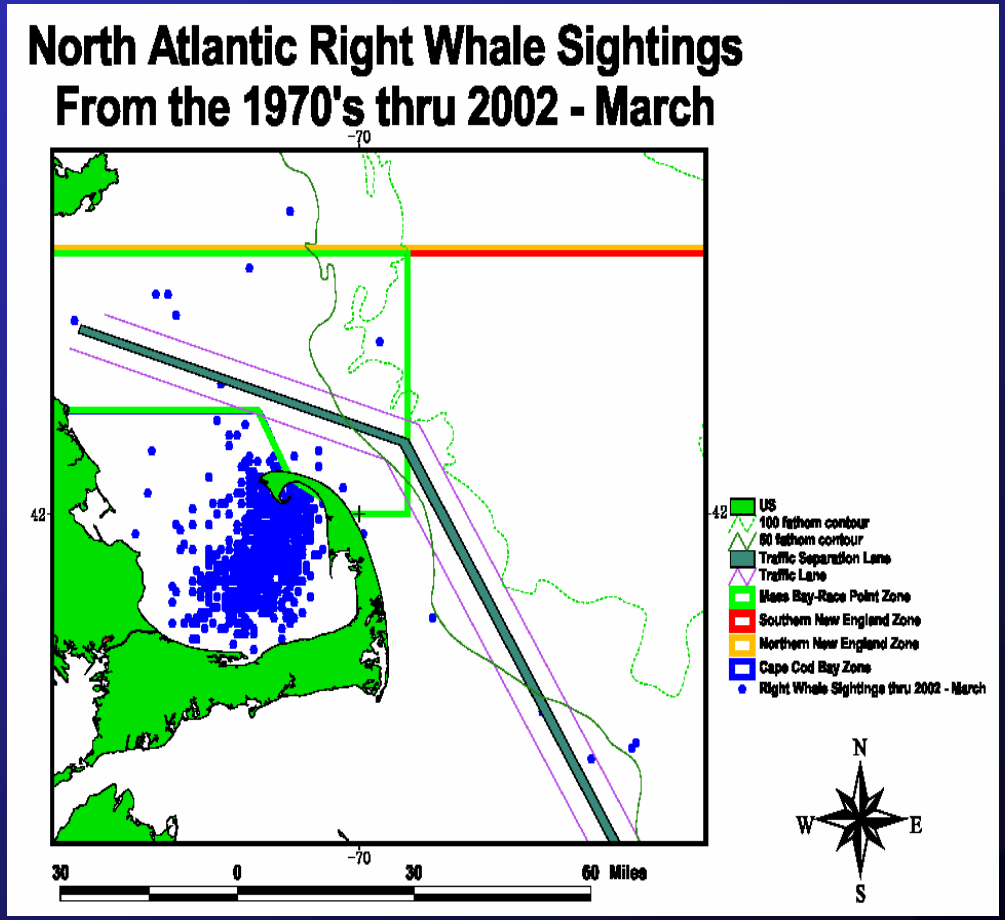
- Right whales only
- Commercial Vessels
- Other Vessels $\geq$ 65 ft
  - Tug & tow
  - Fishing vessels
  - Small passenger (party & head boats)
  - Whale watch
  - Recreational

Some Measures Considered, but Eliminated

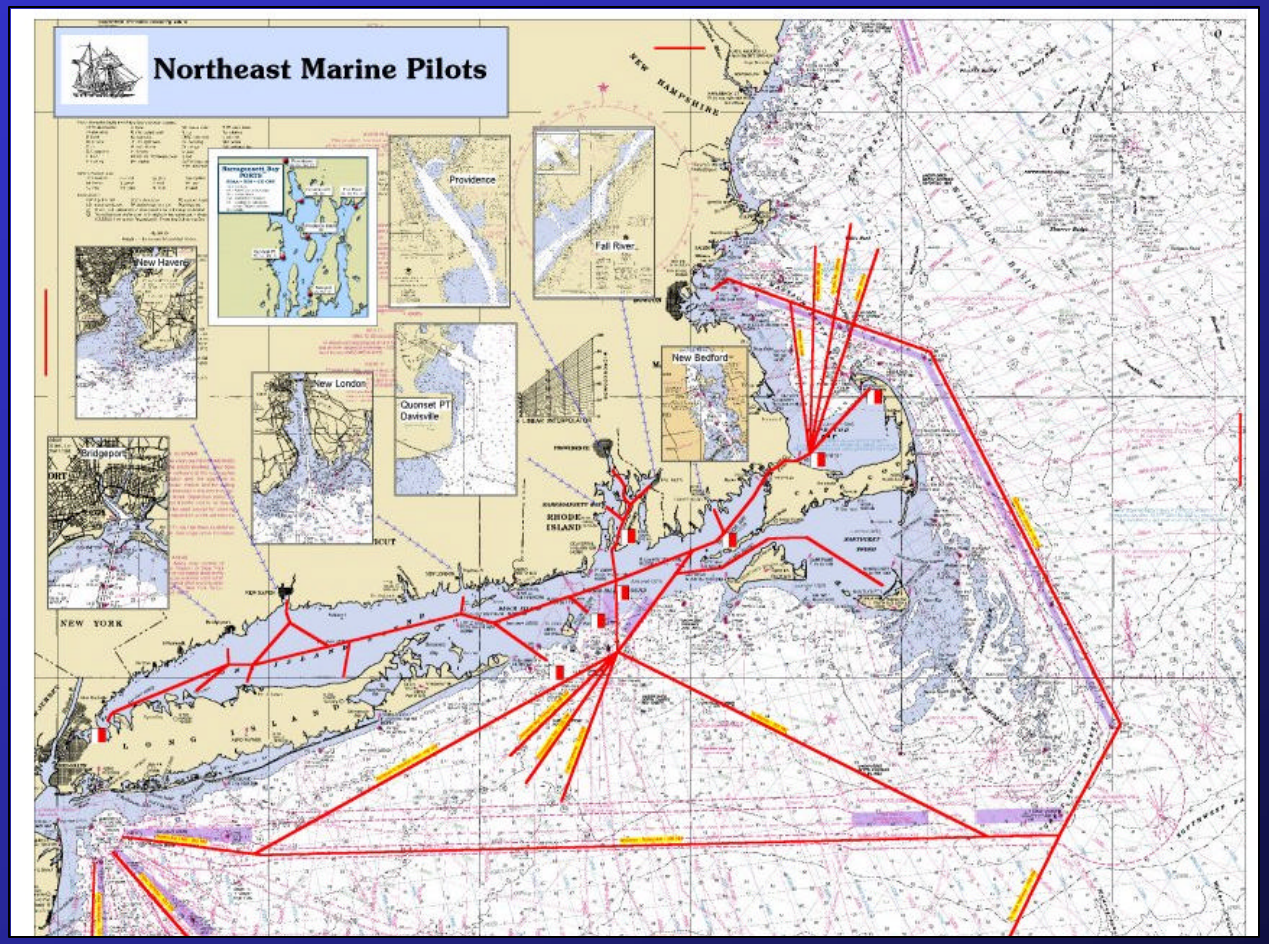
- Mandatory traffic lanes (IMO)
- Cape Cod Bay seasonal closure ($$$)
- Escort boats w/trained marine mammal observers ($$, night,weather)
- Voluntary measures (no industry support)
- Do nothing (fails to address problem)

Cape Cod Bay (CCB) Zone

- Concentrations January - April
- Feeding
- Risks –Traffic to/from
  - CC Canal
  - Provincetown



Cape Cod Bay Measures



- **Traffic Routes in CCB & off Southern New England, provided by Northeast Marine Pilots**

Ship Strike Cape Cod Bay

Adult female right whale found dead in CCB April1999

Cape Cod Bay Measures

- Time: 1 January – 30 April
- Area: Cape Cod Bay Right Whale Critical Habitat to western shoreline of Bay

Cape Cod Bay Measures

- Establish ship routes based on US Coast Guard Port Access Route Study (PARS)
- Consider establishing CCB Critical Habitat as a ‘no entry zone’ or limited access area
  - Generally acceptable to shipping industry
  - Will include important component of CCB traffic, i.e., tugs & barges

Cape Cod Bay Measures

- **Ship route - Boston & ports North**
  - Western side of CCB & outside of critical habitat
  - Sufficient width to route around whales
- **Ship route - Provincetown**
  - Minimize travel distance thru critical habitat
  - Sufficient width to route around whales
  - Speed restrictions in lanes
    - Lift speed restrictions when “no” whales

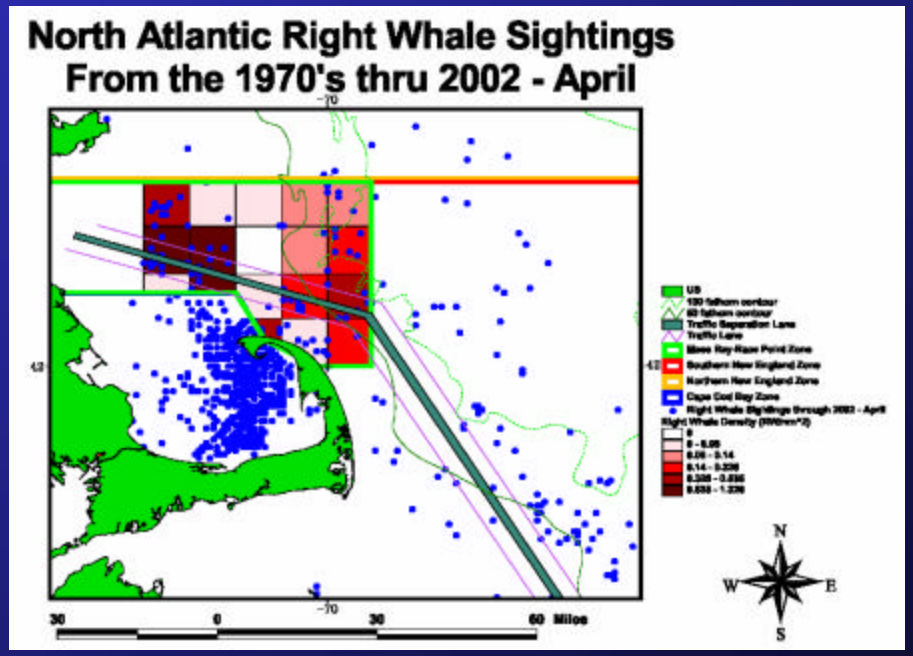
Cape Cod Bay Measures

- **Established Letter of Agreement with Army Corps of Engineers for Cape Cod Canal**
  - Formalized & enhanced existing agreement (mariner notifications)
    - Include tug & barge traffic
    - Include north & south bound traffic

Tug and Barge in Cape Cod Canal; major component of CCB traffic

Off Race Point (ORP) Zone

- Whales move N and E from Cape Cod Bay in April-May
- Risks - Traffic in/out of Boston & ports north



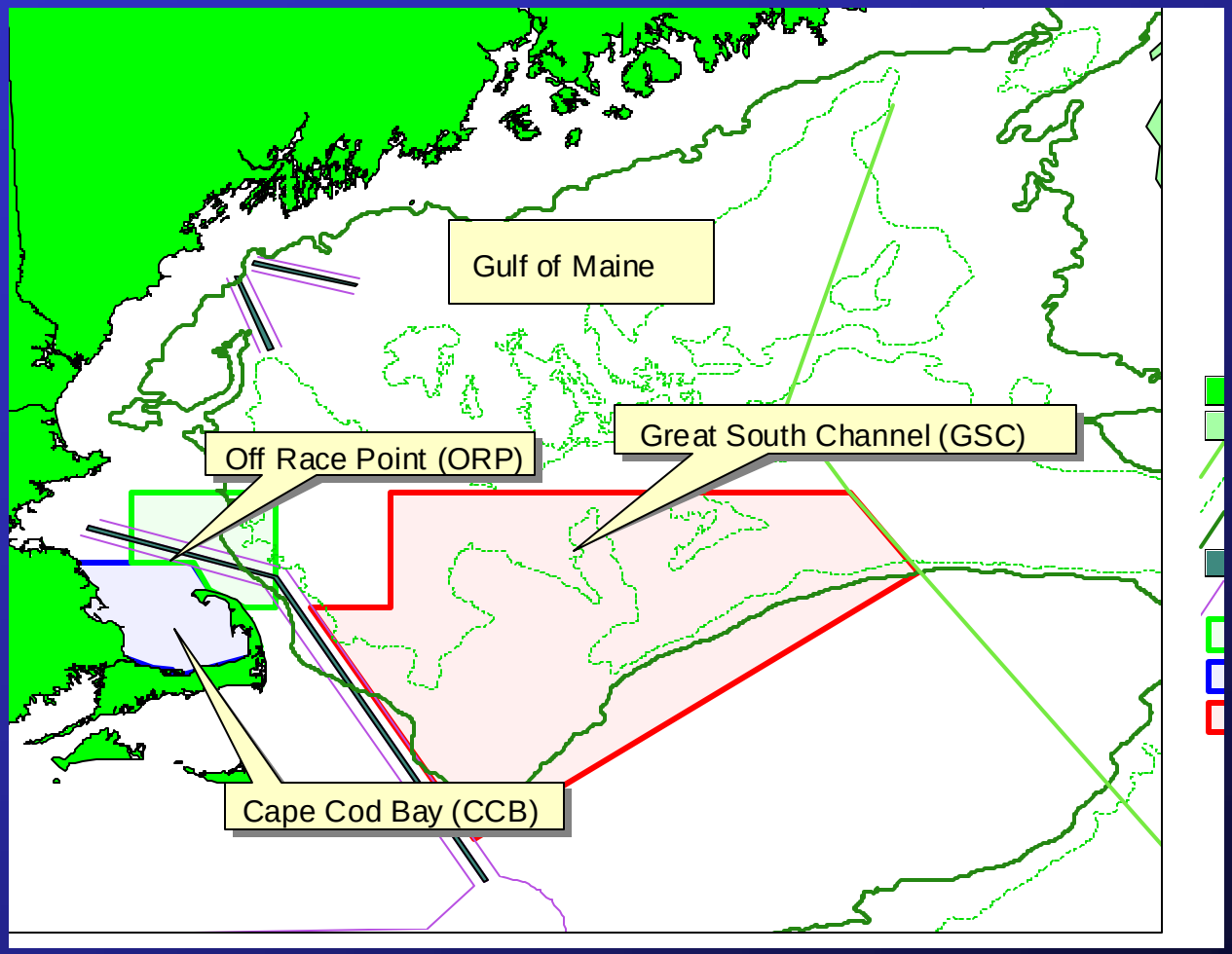
Off Race Point Measures

- Time: 1 April – 15 May
- Area: north & east of Cape Cod Bay Critical Habitat (includes part of the Boston Traffic Lanes)

Off Race Point Measures

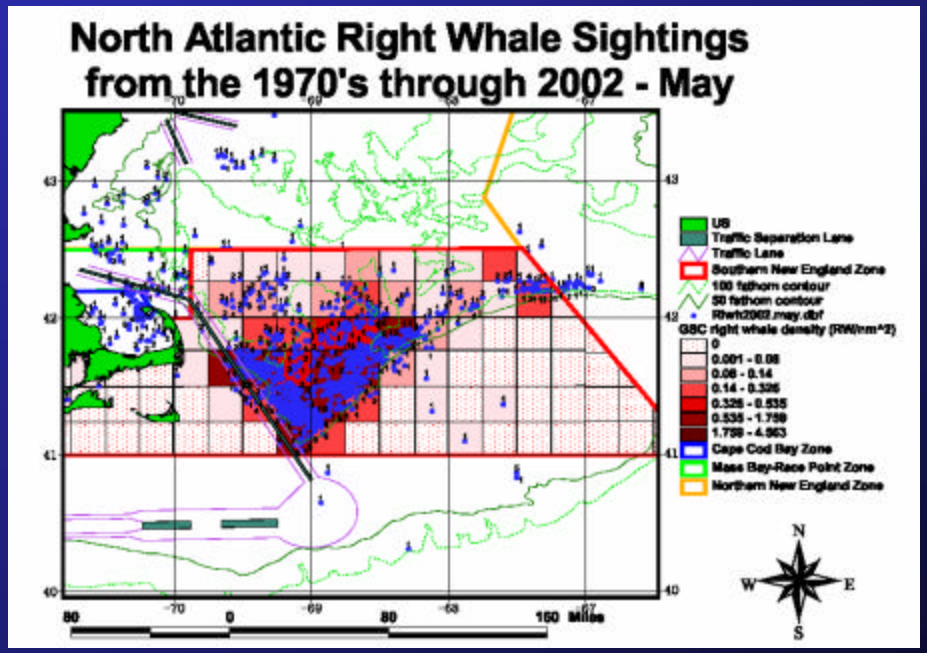
- **Speed restriction in the zone** OR
- **Route around the zone**
  - Mariner flexibility
  - Predictable (seasonal period specified)

Great South Channel (GSC) Zone

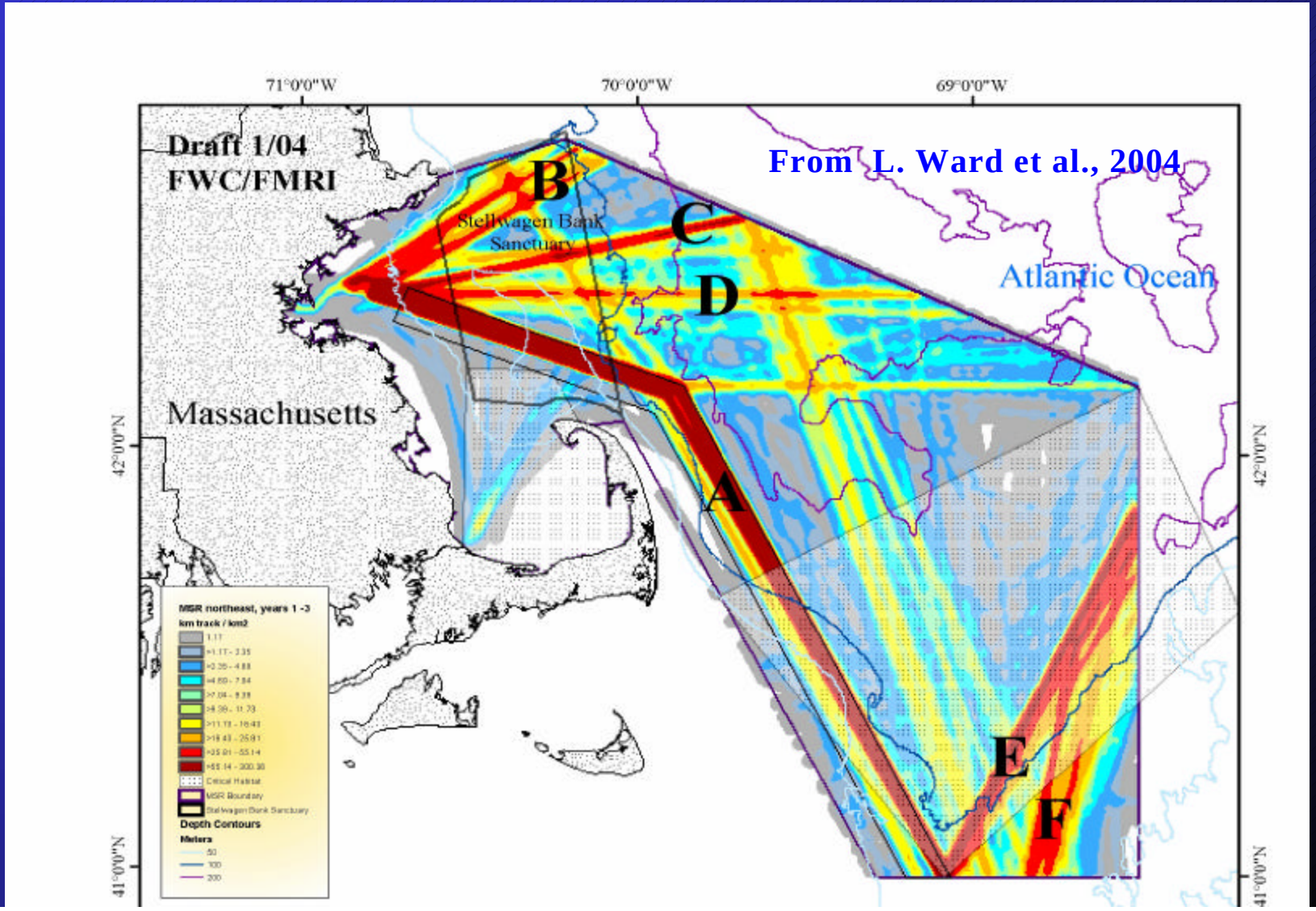


Great South Channel (GSC) Zone

- Whales move eastward in May-July
- Still feeding
- Risk - Boston TSS & both N-S & E-W traffic over GSC & Georges Bank



Mandatory Ship Reporting Data



Right whale with hole in skull observed in GSC in 1995 ; never re-sighted.

Great South Channel Measures

- Time: 1 April – 31 July
- Area: east of the Boston Traffic Lanes, inclusive of the Great South Channel Critical Habitat and part of Georges Bank, out to the Hague Line

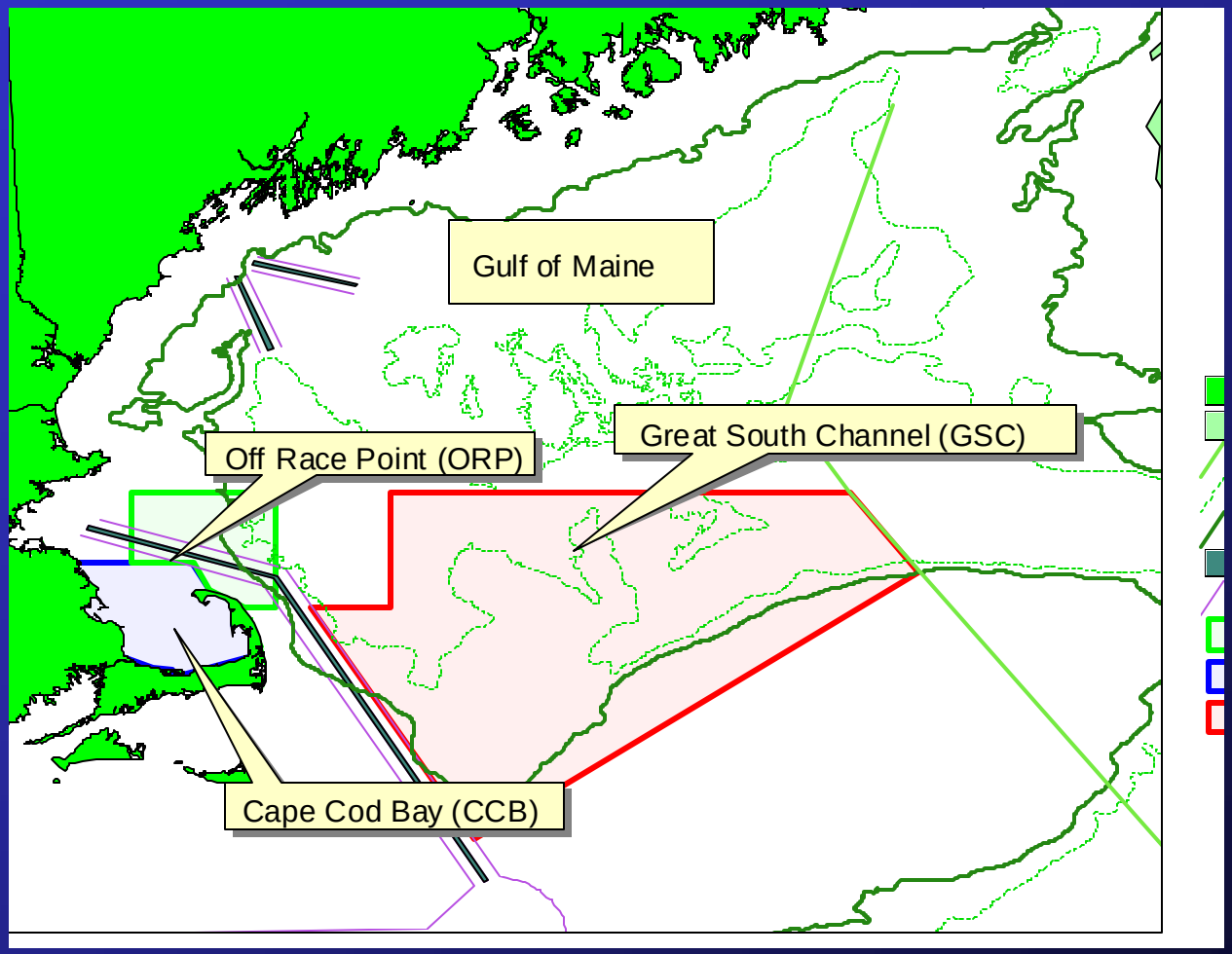
Great South Channel Measures

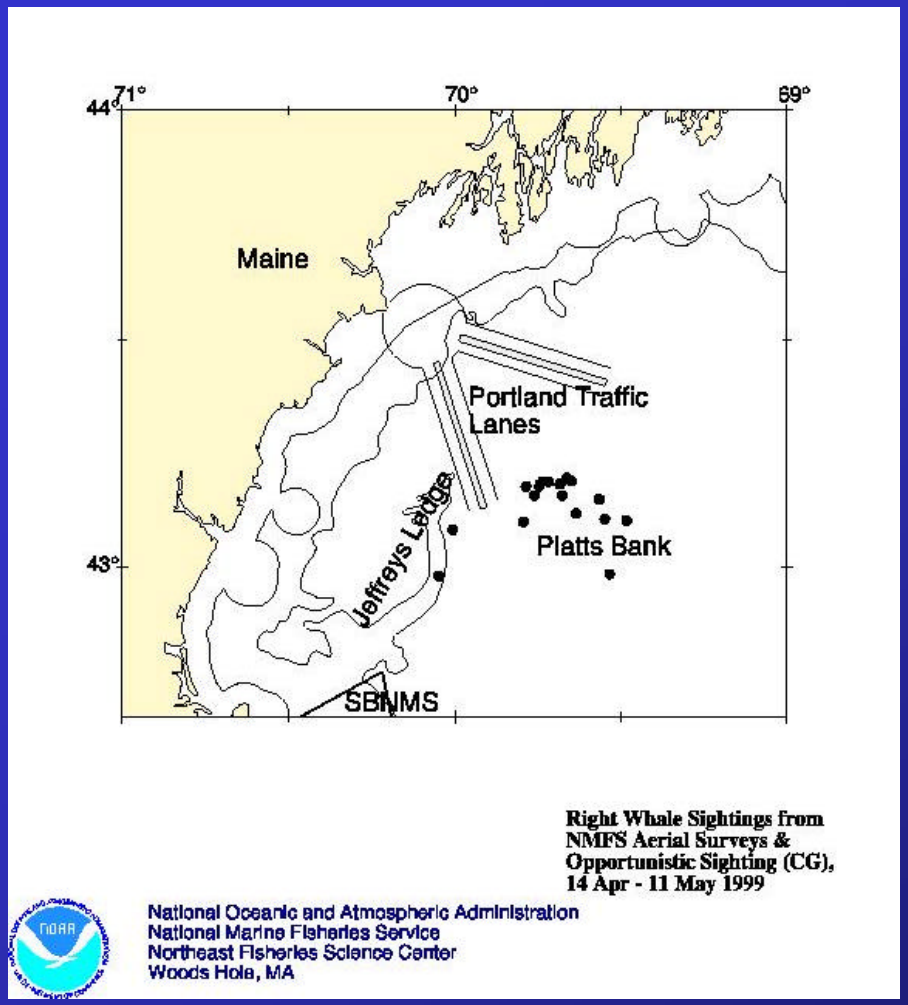
- **Area to be Avoided (ATBA) for vessels ≥ 300 gross tons**
  - Smaller area to survey (i.e., shipping lanes)
  - Predictable – seasonal period specified
- **Speed restrictions for ATBA for Vessels < 300 gross tons & ≥ 65 ft**
  - Will not preclude vessels ≥ 65 ft & < 300 gross tons (e.g., F/V) from ATBA
    - **operation allowed under speed restrictions**

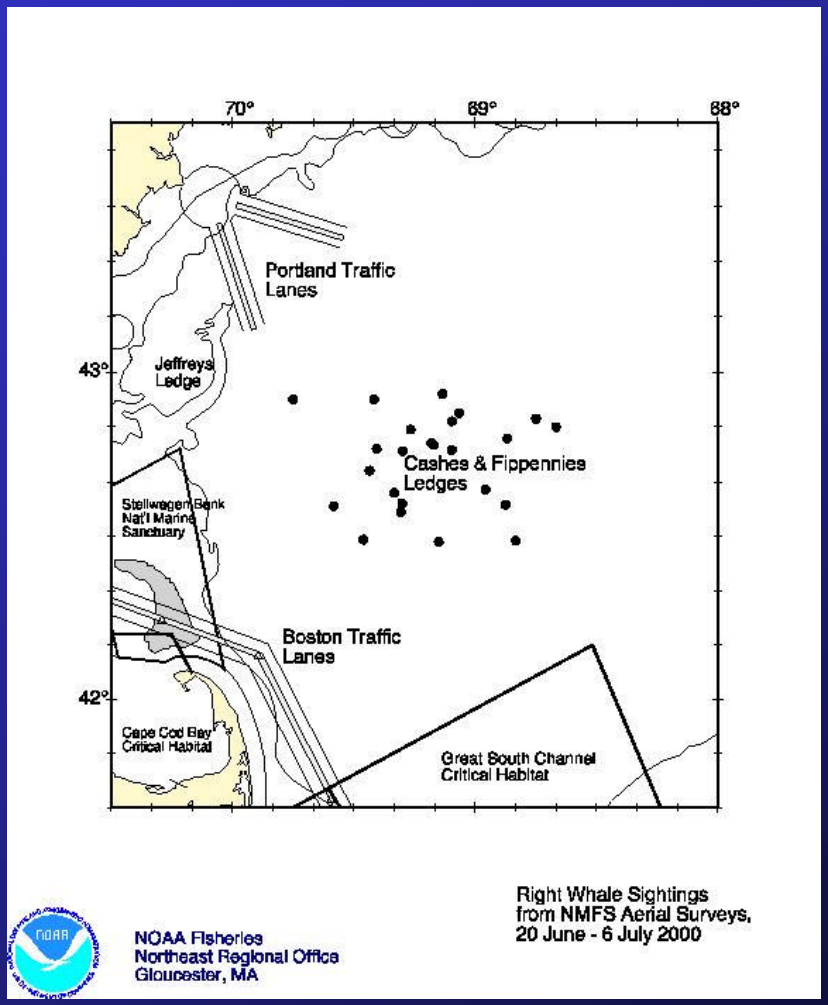
Area To Be Avoided (ATBA)

- ATBA –routing measure comprising an area within defined limits which should be avoided by certain classes of ships
- Reduce collision threat to right whales
- Will require IMO approval
- Possible Effects
    - Increase in ships using Boston TSS
    - Ships route around GSC ATBA

Gulf of Maine (GOM) Zone

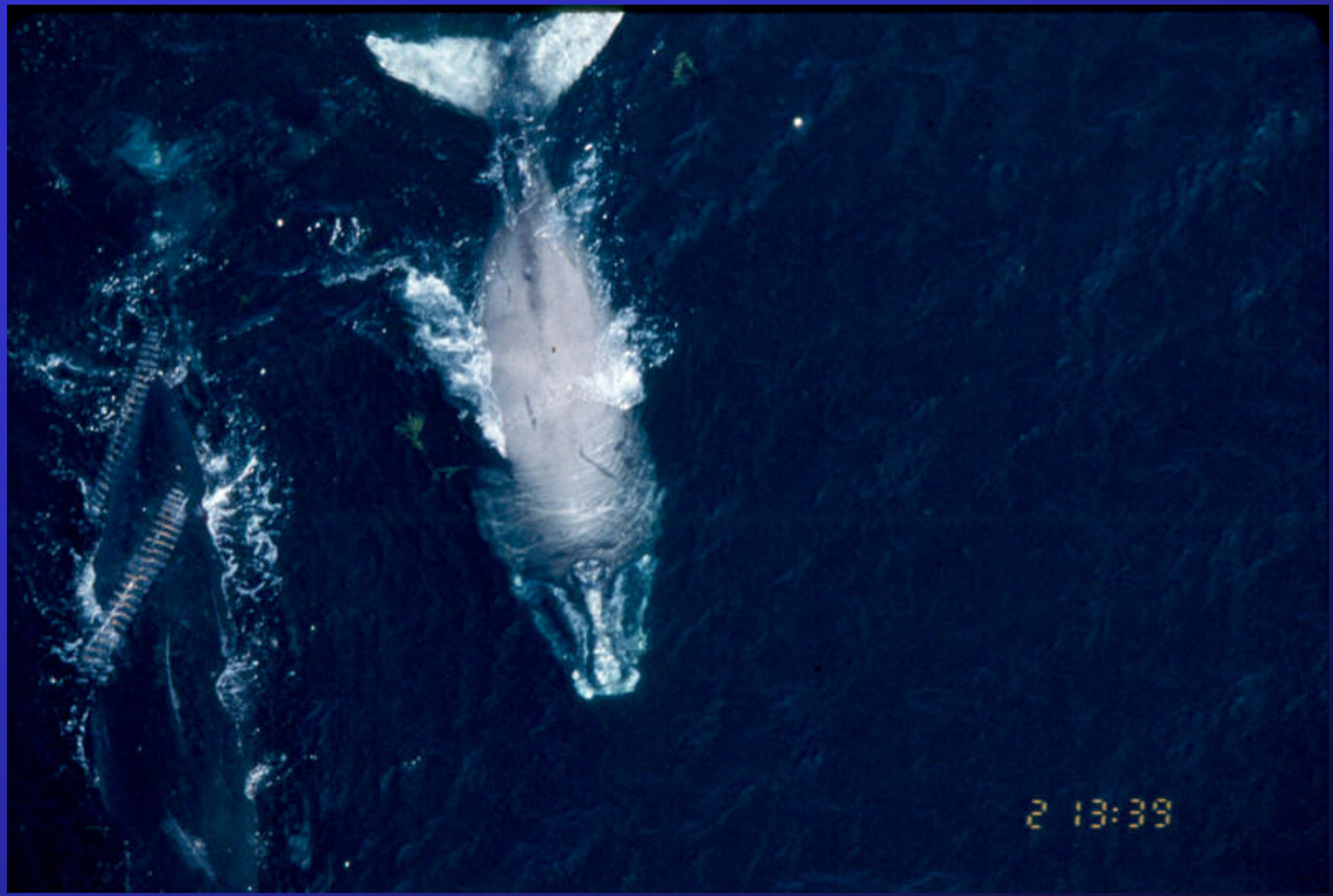






Platts Bank April-May 1999

Cashes Ledge June-July 2000



Mother & calf right whale pair sighted in GOM 2001. Mother had been struck off southeast US earlier in 2001.

Right Whale Use of the Gulf of Maine

- Right whales assumed to be present, at generally low densities, year round in Gulf of Maine waters
- Recent survey data suggest they are present because they are:
  - Feeding (Platts & Cashes)
  - Migrating

Gulf of Maine Measures

- Time: year – round
- Area: area under U.S. jurisdiction north of CCB, Race Point, and GSC management areas

Gulf of Maine Measures

- **Dynamic management areas** (buffer area around whales requiring re-routing or speed reduction)
  - Based on real-time right whale distribution data from surveys
  - Measures may be supplemented as additional data become available
  - Implemented when necessary
  - Mariner flexibility – option to slow or route around area

NE Waters - Summary

- Four management zones (Maine to Cape Cod)
  - CCB – Seasonal no entry zone with designated routes (Boston & north, Provincetown)
  - ORP – Seasonal routing or speed restriction
  - GSC – Seasonal ATBA for large ships and speed restrictions for smaller ships
  - GOM – Dynamic management area(s)

Whale Avoidance/Ship Strike Reduction Web Site

http:/www.nero.noaa.gov/shipstrike